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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/887,566 | 06/25/2001 | Joseph Gil | 01/22003 | 7558 |

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EXAMINER

PATEL, KANJIBHAI B

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2625

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/887,566

Applicant(s)

GIL ET AL.

Examiner

Kanji Patel

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,5 and 12-15 is/are allowed.
- 6) ☒ Claim(s) 18-31 is/are rejected.
- 7) ☒ Claim(s) 2,3,6-11,16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to because of the very poor quality of printing which makes very hard to read and understand. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. A substitute specification excluding the claims is required pursuant to 37 CFR 1.125(a) because the printed disclosure copy is very difficult to read and understand. Small letters used in symbol characters and expressions are not easily readable or understandable. For example, page 2, equation on line 5, and symbols used in explaining the GWVH algorithm (pages 2-7, 13-18), etc.

A substitute specification filed under 37 CFR 1.125(a) must only contain subject matter from the original specification and any previously entered amendment under 37 CFR 1.121. If the substitute specification contains additional subject matter not of record, the substitute specification must be filed under 37 CFR 1.125(b) and (c).

Claim Objections

3. **Claims 2-3, 6-11 and 16-17** objected to because of the following informalities:

For claims 2-3, 6-11 and 16-17 line 1, change " Apparatus" to – Data filtering apparatus--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19 and 22-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "said sector" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Houben (US 5,817,133).

For claim 18, Houben discloses a method for data filtering capable of computing both minimal and maximal values per point of a given data input (at least figures 3A-3E and 8; column 4 line 42 to column 5 line 55) comprising:

comparing two successive data inputs to find a minimum (figure 3B) and a maximum (figure 3A) thereof,

using the minimum in a minimal filter to produce a minimal filter output for said data (figure 3B),

using the maximum in a maximal filter to produce a maximal filter output for said data (figure 3A).

For claim 20, Houben discloses a method capable of efficiently computing a maximum filter (figure 3A) of a minimum filter (figure 3B) comprising:

computing the minimum filter (figure 3B) using data segmented (in figure 3B input signal X is delayed by 42, 43, 44 providing segmented or sampled value m0, m1, m2—using template data Te stored at 49) according to a segmentation pattern;

maintaining said data segmentation pattern of the minimum filter (column 5, lines 19-40);

passing the data segmentation pattern from the minimum filter to the maximum filter (in figure 3D, 53 is a minimum filter and 52 is a maximum filter) ;

the maximum filter (figure 3A; column 5 line 52 to column 6 line 14) using the data segmentation pattern to efficiently compute the segment values.

For claim 21, Houben discloses a method capable of efficiently computing a minimum filter (figure 3B) of a maximum filter (figure 3A) comprising:

computing the maximum filter (figure 3A) using data segmented according to a segmentation pattern (column 4 line 52 to column 6 line 14);

maintaining said data segmentation pattern of the maximum filter (figure 3A; column 4 line 52 to column 6 line 14);

passing the data segmentation pattern from the maximum filter to the minimum filter (in figure 3C, 52 is a maximum filter and 53 is a minimum filter);

the minimum filter (column 5, lines 19-55) using the data segmentation pattern to efficiently compute the segment values.

Allowable Subject Matter

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1 and 4-5, 12-15 are allowed.

For independent claim 1, the prior art on record fails to teach or suggest, singly or in combination, for a data filtering apparatus comprising, among other things, an extremity filter unit for comparing said ordered data on either side of said midpoint to create a temporary output per segment, for each segment, each data item on either side of said midpoint being given an extremity filter value, said filter unit being operable to utilize said ordering to find said extremity value via a minimal number of comparisons, said extremity filter for initially comparing a single end of each segment, and being operable to alternate between ends per segment, said extremity filter being further operable to compute remaining ends via comparisons of the middles of presently un-compared ends to the middle of the compared ends, and to conditionally copy a half of the compared end onto the un compared end.

For independent claim 12, the prior art on record fails to teach or suggest, singly or in combination, for an apparatus for filtering data, comprising, among other things, a comparator being set to compare the middle value of the first half of each segment with the middle value of the second half of the respective segment, the

comparator setting the copier to copy a repetitive value from the second segment onto the first segment in accordance with the comparison result.

Claims 2-3, 6-11 and 16-17 would be allowable if rewritten or amended to overcome the minor objection set forth in this Office action.

Claims 19 and 22-31 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Other prior art cited

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sunwoo et al. (US 6,192,160 B1) disclose a hardware architectures for image dilation and erosion operations.

Yamada (US 5,937,111) discloses an image processing method and apparatus.

Maltsev et al. (US 5,987,192) disclose a method and apparatus for processing or resizing digital images, such as images of bar code symbols.

Shibano (US 4,866,785) discloses a multi-valved image processing apparatus and method.

Yamada (US 5,953,461) discloses an image emphasis processing method and apparatus.

Contact information

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Kanji Patel** whose telephone number is (703) 305 4011. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 6:30 p.m. Friday off. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, **Mehta , Bhavesh**, can be reached on (703) 308- 5246.

Any inquiry of general nature or relating to the status of this application should be directed to the **Group receptionist** whose telephone number is (703) 305-3800. The

Fax number for this group is (703) 872-9306.



Kanji Patel
Patent Examiner
Group Art Unit 2625
May 27, 2004